Lake County ILLINOIS

Planning, Building and Development

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Director

Site Capacity and Natural Resource Protection Relationships in Subdivision Design

Site Capacity Calculations

- Determines carrying capacity of the land to be developed – Residential and Nonresidential
- Density calculated based on “Net Site Area”
- Encourages natural resource and open space integration
- Facilitates the planning and design process

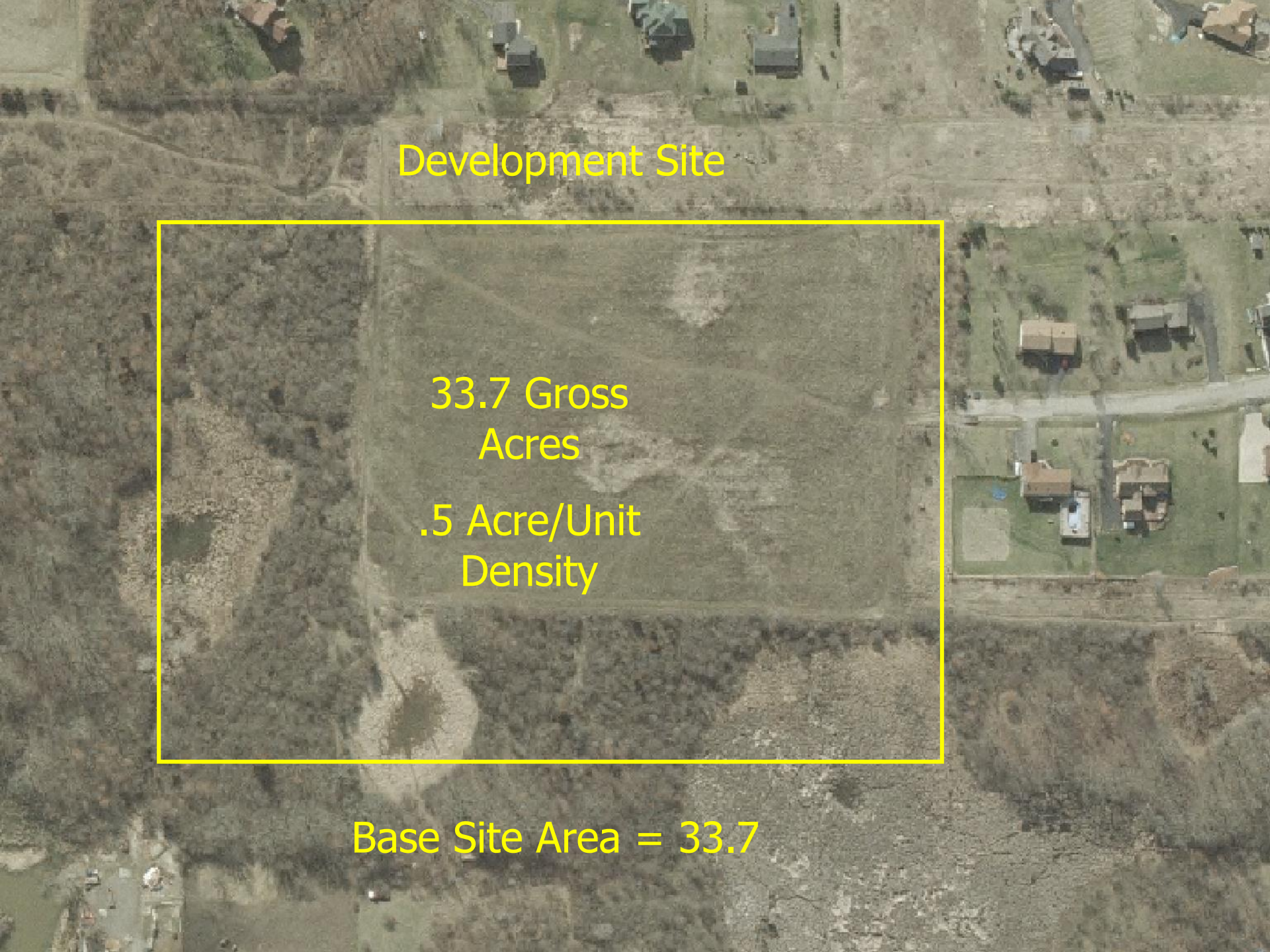
Steps to Complete Site Capacity

1. Base Site Area
2. Net Site Area
3. Calculate Density
4. Determine Resource Protected Land Area
5. Recreational Land (Residential Development)
6. Determine Total Open Space Area

* Residential Developments

Step 1 - Base Site Area Calculation

1. Gross area of property
2. Subtract road, road easements and ultimate rights-of-way
3. Subtract land that is not contiguous
   a. Parcel separate from parent parcel by road or natural feature
   b. Parcel that may be developed on its own
   c. Parcel that is of a different zoning classification.


Development Site
33.7 Gross Acres
.5 Acre/Unit Density
Base Site Area = 33.7

Step 2 - Net Site Area Calculation

1. Base Site Area

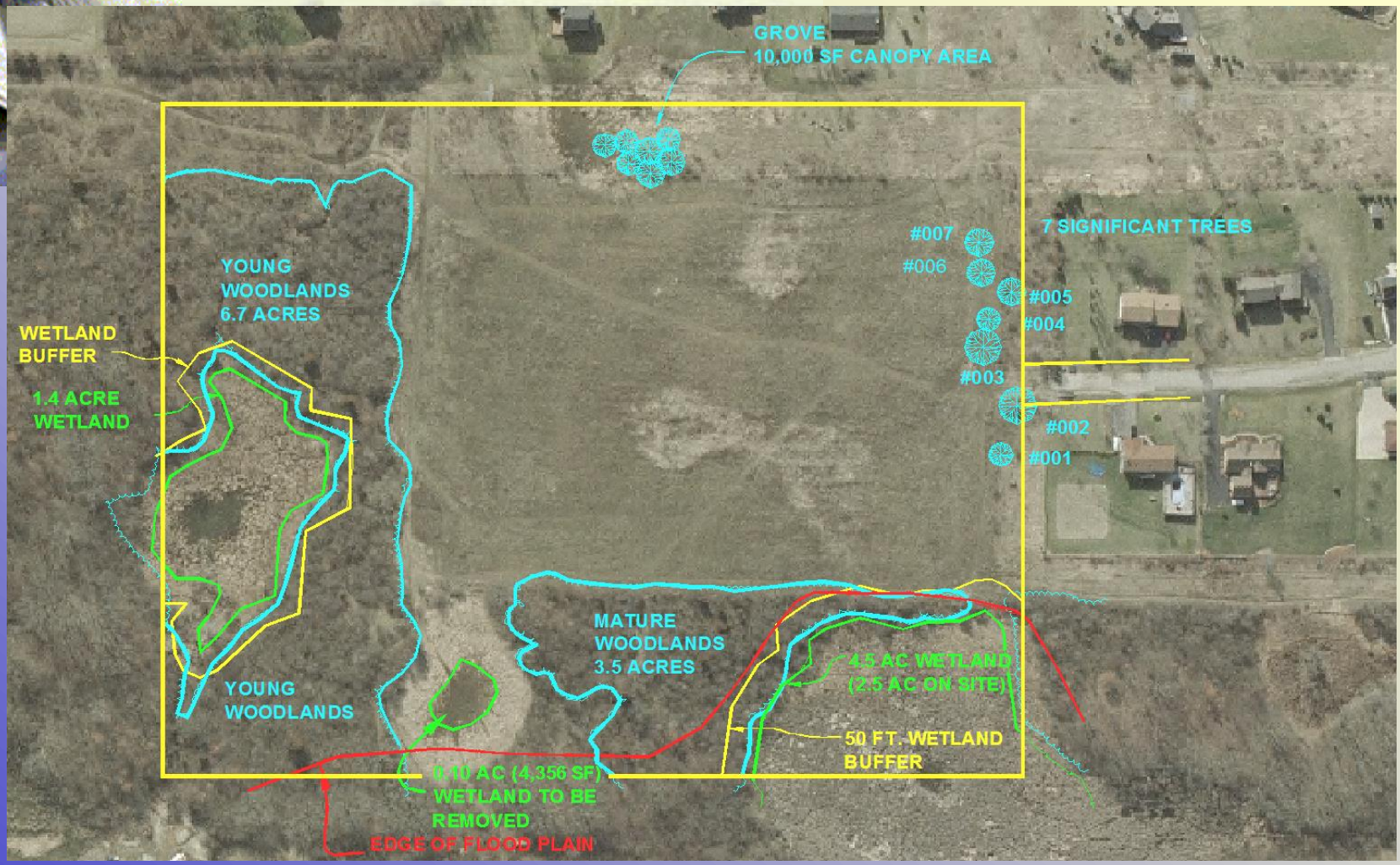
2. Subtract floodplain, wetland, linear and nonlinear water bodies (natural channels, lakes and ponds)

Step 3 - Dwelling Unit Calculation

1. Net Site Area

2. Multiplied by residential density factor based on zoning classification.

3. Unit Yield = 38



NATURAL RESOURCE INVENTORY

(Sections 151.070-151.072 of the Lake County Code)

EXISTING RESOURCE	EXISTING QTY/AREA	PROTECTION REQUIREMENT
GROVE	10,000 SF CANOPY	7,000 SF (70%)
SIGNIFICANT TREES	7 TREES	5 TREES (70%)
YOUNG WOODLAND	6.7 AC	50% (3.35 AC)
MATURE WOODLAND	3.5 AC	70% (2.45 AC)
FLOODPLAIN	3.5 AC	100% (3.5 AC)
WETLAND	5.0 AC	100% of 4.9 AC
WETLAND BUFFER		
4.5 AC WETLAND	38,850 SF	80%
1.4 AC WETLAND	32,000 SF	80%

SIGNIFICANT TREES

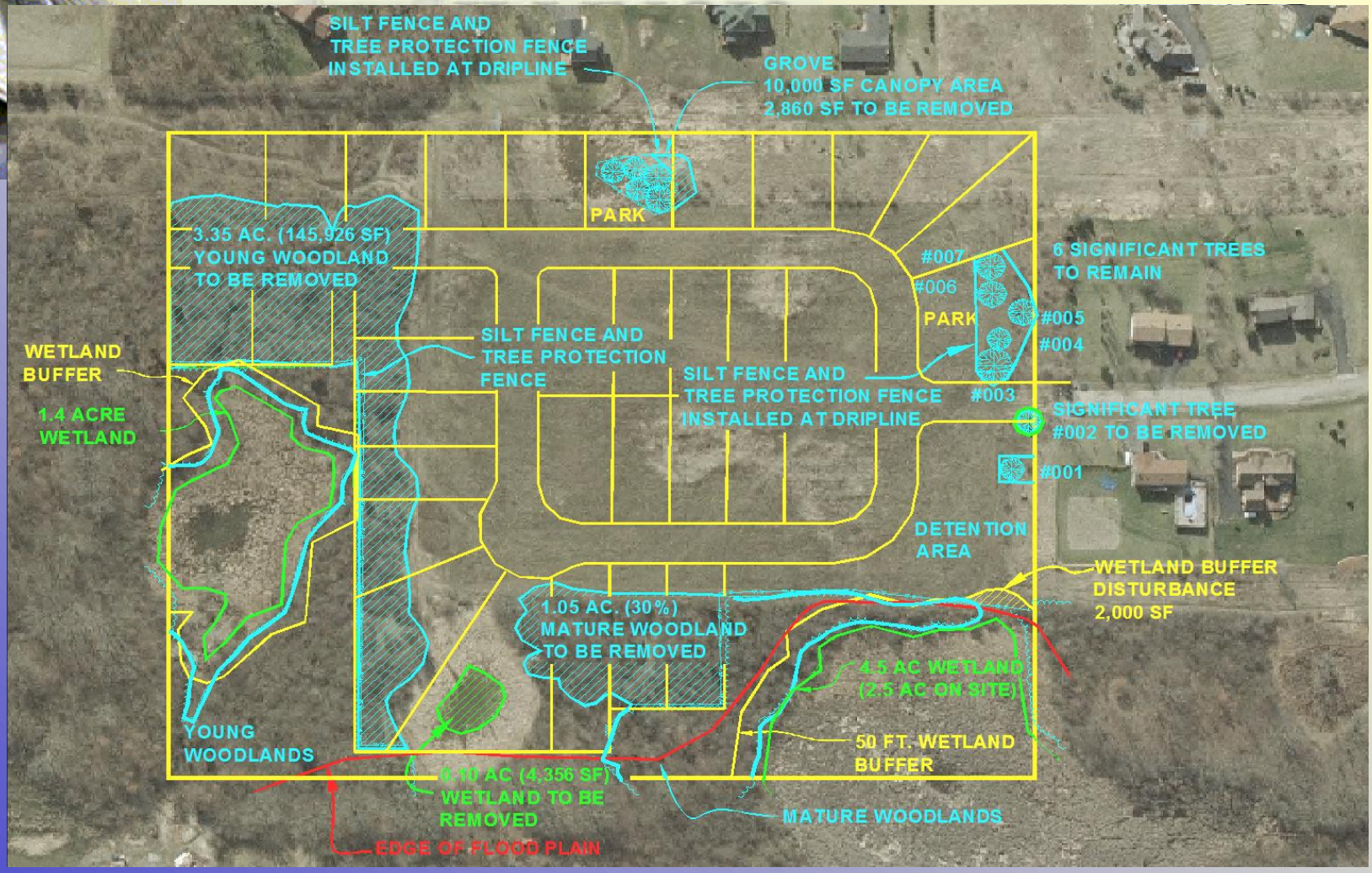
TAG	TYPE	SIZE	CONDITION
001	OAK	30”	GOOD
002	OAK	30”	GOOD
003	OAK	32”	GOOD
004	OAK	32”	GOOD
005	OAK	32”	GOOD
006	OAK	34”	GOOD
007	OAK	24”	GOOD

Step 4 - Natural Resource Land Area Calculation

1. Calculate area contained within each protected resource group

2. Multiply resource area by resource protection ratio from zoning ordinance to determine minimum resource protection land area for each resource.

3. Sum the total for each resource to arrive at total protection land area for property.



NATURAL RESOURCE PLAN

EXISTING RESOURCE	EXISTING QTY/AREA	PROTECTION REQUIREMENT	PROPOSED PROTECTION
GROVE	10,000 SF CANOPY	7,000 SF (70%)	7,200 SF (72%)
SIGNIFICANT TREES	7 TREES	5 TREES (70%)	6 TREES (85%)
YOUNG WOODLAND	6.7 AC	50% (3.35 AC)	50% (3.35 AC/145,929 SF)
MATURE WOODLAND	3.5 AC	70% (2.45 AC)	70% (2.45 AC/106,722 SF)
FLOODPLAIN	3.5 AC	100% (3.5 AC)	100% (3.5 AC)
WETLAND	5.0 AC	100% of 4.9 AC	100% (4.9 AC)
WETLAND BUFFER			
4.5 AC WETLAND	38,850 SF	80%	95% (36,850 SF)
1.4 AC WETLAND	32,000 SF	80%	100%

SIGNIFICANT TREES

TAG	TYPE	SIZE	CONDITION	IMPACT
001	OAK	30”	GOOD	REMOVE
002	OAK	30”	GOOD	SAVE
003	OAK	32”	GOOD	SAVE
004	OAK	32”	GOOD	SAVE
005	OAK	32”	GOOD	SAVE
006	OAK	34”	GOOD	SAVE
007	OAK	24”	GOOD	SAVE

Step 5 - Recreational Land Area Calculation

1. Take dwelling unit count proposed and multiply it against the recreational land area *multiplier.

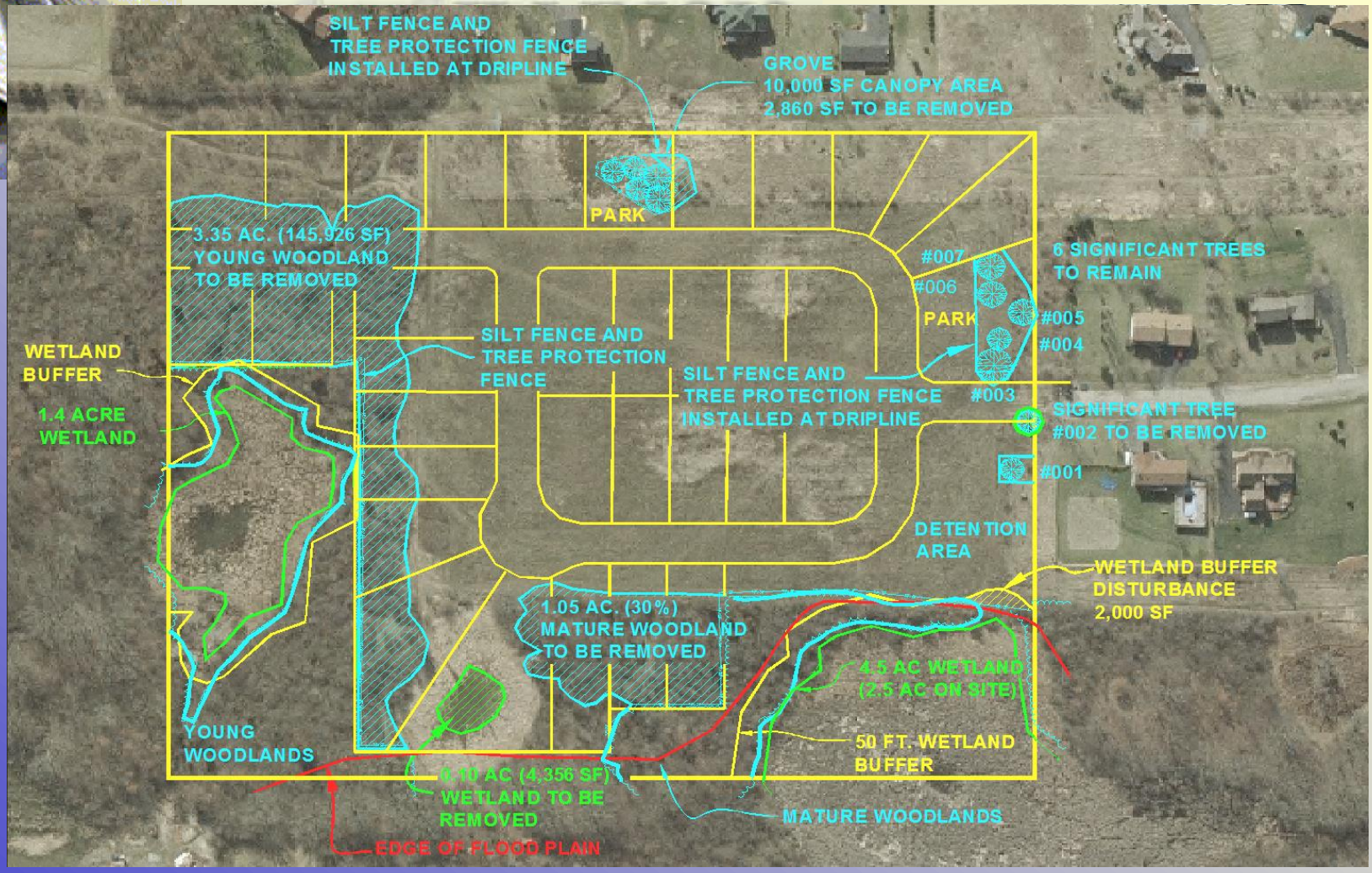
*Based on recreational land area needs from Framework Plan for average County household size

Step 6 - Total Open Space Calculation

Conventional Option

1. Add the total resource protection land area and recreational land area required to be provided.

- Represents the minimum amount of open space for conventional subdivision designs.



REQUIRED RESOURCE PROTECTED AREA

RESOURCE	AREA	PROTECTION REQUIREMENT	
GROVE	10,000 SF CANOPY	7,000 SF (70%)	0.16 AC
YOUNG WOODLAND	6.7 AC	50% (3.35 AC)	2.35 AC*
MATURE WOODLAND	3.5 AC	70% (2.45 AC)	1.45 AC*
FLOODPLAIN	3.5 AC	100% (3.5 AC)	3.50 AC
WETLAND	5.0 AC	100% of 4.9 AC	4.90 AC
WETLAND BUFFER			
4.5 AC WETLAND	38,850 SF	80% (31,080 SF)	0.71 AC
1.4 AC WETLAND	32,000 SF	80% (25,600 SF)	0.58 AC

MINIMUM PROTECTION AREA REQUIREMENT – 13.65 AC

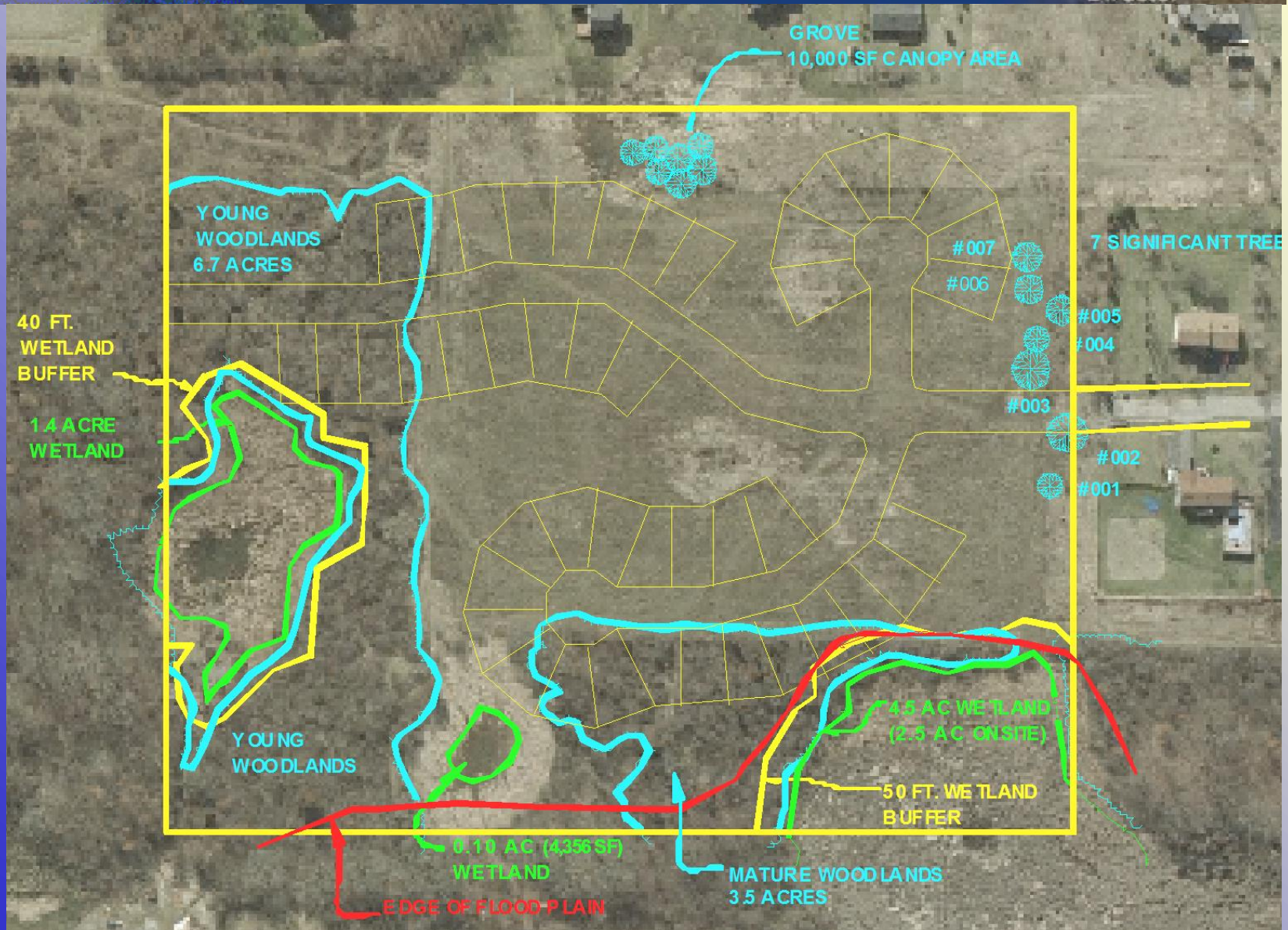
***Wetland buffer overlaps woodland area and is subtracted for total area requirement**

Total Open Space Calculation

Conservation Option

1. Take Base Site Area and multiply it times the minimum open space ratio for zoning classification. (Determines minimum amount of open space required to qualify for conservation option)

2. Compare conventional open space requirement with conservation requirement and provide additional open space to attain minimum requirement.


GROVE
10,000 SF CANOPY AREA
YOUNG
WOODLANDS
6.7 ACRES
#007
#006
7 SIGNIFICANT TREE
#005
#004
#003
#002
#001
40 FT.
WETLAND
BUFFER
1.4 ACRE
WETLAND
YOUNG
WOODLANDS
4.5 AC WETLAND
(2.5 AC ONSITE)
50 FT. WETLAND
BUFFER
0.10 AC (4,356 SF)
WETLAND
EDGE OF FLOOD PLAIN
MATURE WOODLANDS
3.5 ACRES

Open Space Designation

- **Designation based on use of open space**
  - **Detention**
  - **Recreation**
  - **Greenway**
  - **Resource protection**
  - **Landscape**
  - **Sewage Disposal**